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Reply to Office Action of August 21, 2006

**Amendments to the Claims:** 

This listing of claims will replace all prior versions, and listings, of claims in the

application:

**Listing of Claims:** 

1. (Currently Amended) A drawing device for attenuating a plurality of filaments received from a

spin pack of a meltspinning apparatus, said drawing device comprising:

at least one a manifold including an inlet receiving the plurality of filaments from the spin

pack, an outlet oriented in a cross-machine direction, and a slotted passageway extending

therebetween between said inlet and said outlet, said at least one manifold adapted to apply a high-

velocity flow of having a slotted channel communicating with said passageway for discharging air

in the slotted said passageway to imping the filaments in said passageway, and said manifold

discharging the filaments and the flow of air being discharged from said outlet in a discharge

downward direction perpendicular to said cross-machine direction;

a first plurality of guides positioned proximate to said outlet and aligned in a first row

oriented in the cross-machine direction, each of said first plurality of guides inclined at a first angle

relative to said discharge downward direction; and

a second plurality of guides positioned proximate to the outlet of the filament drawing

device and aligned in a second row oriented in the cross-machine direction, each of said second

plurality of guides positioned between an adjacent pair of said first plurality of guides, and each of

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said second plurality of guides inclined at a second angle relative to said discharge downward

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direction,

wherein said first plurality of guides and said second plurality of guides are configured to

cause the flow of air and the filaments to deviate from said discharge downward direction.

2. (Original) The drawing device of claim 1 further comprising:

a plurality of connecting surfaces each extending between one of said first plurality of

guides and one of said second plurality of guides to eliminate open spaces therebetween.

3. (Original) The drawing device of claim 1 wherein said first angle is equal to said second angle.

4. (Original) The drawing device of claim 1 wherein said first angle is in the range of 3° to 30°.

5. (Original) The drawing device of claim 4 wherein said second angle is in the range of 3° to 30°.

6. (Currently Amended) The drawing device of claim 1 wherein said first plurality of guides and

said second plurality of guides are inclined symmetrical symmetrically about a plane containing

said discharge downward direction so that said first angle is equal and opposite to said second

angle.

7. (Currently Amended) The drawing device of claim 1 wherein said first plurality of guides and

said second plurality of [[guide]] guides are configured to cause the flow of air and the filaments to

deviate in opposite upstream and downstream directions relative to said discharge downward

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direction.

8. (Currently Amended) A drawing device for attenuating a plurality of filaments received from a spin pack of a meltspinning apparatus, said drawing device comprising:

at least one a manifold including an inlet receiving the plurality of filaments from the spin pack, an outlet oriented in a cross-machine direction, and a slotted passageway extending therebetween between said inlet and said outlet, said at least one manifold adapted to apply a high-velocity flow of having a slotted channel communicating with said passageway for discharging air in the slotted said passageway to impinge the filaments in said passageway, and said manifold discharging the filaments and the flow of air being discharged from said outlet in a discharge downward direction perpendicular to said cross-machine direction; and

a plurality of guides <u>positioned proximate to said outlet and</u> aligned in a row <u>proximate to said outlet oriented generally in the cross-machine direction</u>, said plurality of guides each inclined for causing the flow of air and the filaments to deviate from said <u>discharge downward direction</u>, <u>each of said plurality of guides having a progressively varying a plurality of facets inclined at different angles [[angle]] relative to said <u>discharge</u> downward direction.</u>

9. (Currently Amended) The drawing device of claim 8 wherein said progressively varying angle varies systematically in a pattern said different angles of said facets increase in inclination angle with increasing distance from said outlet.

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10. (Currently Amended) A drawing device for attenuating a plurality of filaments received from

a spin pack of a meltspinning apparatus, comprising:

at least one manifold including an inlet receiving the filaments from the spin pack, an

outlet, and a slotted passageway extending between said inlet and said outlet, said at least one

manifold adapted to apply a high-velocity flow of air in the slotted passageway to impinge the

filaments, the filaments and the flow of air being discharged from said outlet in a discharge

direction; and

a plurality of guides aligned in a row proximate to said outlet, said plurality of guides each

inclined for causing the flow of air and the filaments to deviate from said discharge direction, said

plurality of guides having [[a]] an angle relative to said discharge direction that progressively

varies across a width of said outlet.

11. (Currently Amended) The drawing device of claim 10 wherein said progressively varying

angle varies systematically in a pattern said guides are inclined at equal angular increments

between first and second angles about a plane containing the discharge direction.

12. (Currently Amended) A spunbonding apparatus for depositing filaments on a collector to form

a nonwoven web, comprising:

a spin pack capable of forming filaments from a thermoplastic material;

a drawing device having an inlet receiving the plurality of filaments from the spin pack, an

outlet oriented in a cross-machine direction, and a slotted passageway extending therebetween

between said inlet and said outlet, said at least one manifold adapted to apply a high velocity flow

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of having a slotted channel communicating with said passageway for discharging air in the slotted said passageway to impinge the filaments in said passageway, and said manifold discharging the filaments and the flow of air being discharged from said outlet in a discharge downward direction perpendicular to said cross-machine direction;

a first plurality of guides positioned proximate to said outlet and aligned in a first row oriented in the cross-machine direction, each of said first plurality of guides inclined at a first angle relative to said discharge downward direction; and

a second plurality of guides positioned proximate to the outlet of the filament drawing device and aligned in a second row <u>oriented in the cross-machine direction</u>, each of said second plurality of guides positioned between an adjacent pair of said first plurality of guides, and each of said second plurality of guides inclined at a second angle relative to said <u>discharge downward</u> direction,

wherein said first plurality of guides and said second plurality of guides cause the flow of air and the filaments to deviate from said discharge downward direction, and said first angle of said first plurality of guides differs from said second angle of said second plurality of guides.

## 13. (Original) The spunbonding apparatus of claim 12 further comprising:

a plurality of connecting surfaces each extending between one of said first plurality of guides and one of said second plurality of guides to eliminate open spaces therebetween.

14. (Original) The spunbonding apparatus of claim 12 wherein said first angle is equal to said second angle.

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15. (Original) The spunbonding apparatus of claim 12 wherein said first angle is in the range of 3°

to 30°.

16. (Original) The spunbonding apparatus of claim 15 wherein said second angle is in the range of

3° to 30°.

17. (Currently Amended) The spunbonding apparatus of claim 12 wherein said first plurality of

guides and said second plurality of guides are inclined symmetrically about a plane

containing said discharge downward direction so that said first angle is equal and opposite to said

second angle.

18. (Original) The spunbonding apparatus of claim 12 wherein said first plurality of guides and

said second plurality of guides are faceted.

19. (Currently Amended) The spunbonding apparatus of claim [[1]] 12 wherein said first plurality

of guides and said second plurality of [[guide]] guides are configured to cause the flow of air and

the filaments to deviate in opposite upstream and downstream directions relative to said discharge

downward direction.

20. (Currently Amended) A spunbonding apparatus for depositing a plurality of filaments on a

collector to form a nonwoven web, comprising:

a spin pack capable of forming filaments from a thermoplastic material;

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a drawing device having an inlet aligned for receiving the plurality of filaments from said spin pack, an outlet oriented in a cross-machine direction, and a slotted passageway extending from the between said inlet [[to the]] and said outlet, said filament drawing device adapted to apply a high velocity flow of having a slotted channel communicating with said passageway for discharging air in the slotted said passageway between said inlet and said outlet to impinge the filaments in said passageway, and said manifold discharging the filaments and air being discharged from said outlet in a discharge downward direction perpendicular to said cross-machine direction; and

a plurality of guides <u>positioned proximate to said outlet and</u> aligned in a row <u>proximate to said outlet oriented generally in the cross-machine direction</u>, said plurality of guides each inclined for causing the flow of air and the filaments to deviate from said <u>discharge downward direction</u>, <u>each of said plurality of guides having a progressively varying a plurality of facets inclined at different angles [[angle]] relative to said <u>discharge</u> downward direction.</u>

- 21. (Currently Amended) The spunbonding apparatus of claim 20 wherein wherein said progressively varying angle varies systematically in a pattern said different angles of said facets increase in inclination angle with increasing distance from said outlet.
- 22. (Currently Amended) A spunbonding apparatus for depositing filaments on a collector to form a nonwoven web, comprising:
  - a spin pack capable of forming filaments from a thermoplastic material;
  - a drawing device including an inlet aligned for receiving the filaments from said spin pack,

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an outlet, and a slotted passageway extending from the inlet to the outlet, said filament drawing

device adapted to apply a high-velocity flow of air in the slotted passageway between said inlet and

said outlet to impinge the filaments, the filaments and air being discharged from said outlet in a

discharge direction; and

a plurality of guides aligned in a row proximate to said outlet, said plurality of guides each

inclined for causing the flow of air and the filaments to deviate from said discharge direction, and

said plurality of guides having [[a]] an angle relative to said discharge direction that progressively

varies across a width of said outlet.

23. (Currently Amended) The spunbonding apparatus of claim 22 wherein said progressively

varying angle varies systematically in a pattern said guides are inclined at equal angular increments

between first and second angles about a plane containing the discharge direction.

24-29. (Canceled)

30. (New) The drawing device of claim 1, wherein each guide of the first plurality of guides and of

the second plurality of guides includes a surface that is parallel to the cross-machine direction.

31. (New) The drawing device of claim 1, wherein said first angle differs from said second angle.

32. (New) A drawing device for attenuating a plurality of filaments received from a spin pack of a

meltspinning apparatus, said drawing device comprising:

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a manifold including an inlet receiving the plurality of filaments from the spin pack, an outlet oriented in a cross-machine direction, and a passageway extending between said inlet and said outlet, said manifold having a slotted channel communicating with said passageway for discharging air in said passageway to impinge the filaments in said passageway, and said manifold discharging the filaments and the flow of air from said outlet in a downward direction perpendicular to said cross-machine direction; and

a plurality of guides positioned proximate to said outlet and aligned in a row oriented generally in the cross-machine direction, said plurality of guides each inclined for causing the flow of air and the filaments to deviate from said downward direction, each of said plurality of guides including a surface having an increasing angle of inclination relative to said downward direction with increasing distance from said outlet.

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